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**ANONYMOUS WARRIOR:
THE CONTRIBUTIONS OF HAROLD L. GEORGE TO
STRATEGIC AIR POWER**

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Major Craig R. Edkins

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Preface

This paper addresses the contributions of Lt Gen Harold L. George to the development and implementation of strategic air power theory. General George served at the edge of mainstream air power history. He was a bomber pilot on the western front during World War I, participated in the bombing of the Ostfriesland, and testified at the Mitchell court-martial. As Chief of Air Tactics and Strategy at the Air Corps Tactical School from 1932 to 1936, he developed and codified his strategic bombing theory. Finally, as the Chief of Air Staff for War Plans on the eve of World War II, he used that theory to develop the strategic bombing campaign that was employed during the war. Despite the tremendously important role he played, General George is not well known outside of air power academia, and even then more for his role as the first commander of Air Transport Command. This paper is an attempt to redress this oversight.

I would like to acknowledge the outstanding assistance of the staff of the Air Force Historical Research Agency. Their archives are truly a national treasure. I would also like to acknowledge the assistance of my advisors, Major Ed Marsalis and Major Carl Baner for sparking my interest in this subject. Finally, I would like to thank my wife, Karen, and daughters, Aubrey and Claire, for their support and understanding throughout this endeavor.

Abstract

This paper examines the role of Harold L. George in the development and implementation of the strategic bombing theory used during World War II. It focuses on three main areas, each supported primarily by documents from the Air Force Historical Research Agency. First, this paper shows that through his associations with the Army Air Corps' founding elite, General George had the credibility to make an impact. Second, as Chief of Air Tactics and Strategy at the Air Corps Tactical School from 1933 to 1936, George codified his strategic air power theory and thus demonstrated the motive for his contributions. Finally, this paper contends that as the Chief of Air Staff for War Plans on the eve of World War II, George took the opportunity to implement his strategic bombardment theory by developing the air war plan against Germany.

Chapter 1

Introduction

On Maxwell Air Force Base in Montgomery, Alabama, a somewhat ornate marker in front of Air University reads,

The Air Corps Tactical School moved to Maxwell in 1931. Brilliant young officers like Chennault, Eaker, Fairchild, Hansell, Kuter, LeMay, Quesada, and Vandenburg formulated the aerial strategies and tactics employed in World War II . . .

The one person, that perhaps more than anyone else, was responsible for the development and practical application of strategic bombardment theory during World War II, is omitted from this sign. That person is Lt Gen Harold L. George.

Harold George served at the edge of mainstream air power history. He did not keep a detailed journal¹, he is not the subject of any full-length biographies, and is seldom mentioned outside of air power academia. In fact, he is perhaps better known as the first commander of Air Transport Command, a post he held throughout World War II. As this paper will show, however, George had the credibility, motive, and opportunity to make a tremendous impact on the development and implementation of strategic bombing theory.

Harold George built his credibility over a twenty-three year career leading up to World War II. He served as a bomber pilot on the western front during World War I with the likes of Brig Gen William Mitchell, Maj Gen Hugh Trenchard, and Brig Gen Benjamin Foulois. After the war he again served under General Mitchell in the 14th Bombardment

Squadron where he participated in the bombing tests of 1921, including the sinking of the captured German battleship, the Ostfriesland. Several years later, then Lieutenant George was one of a handful of young officers who testified at General Mitchell's court-martial.

As Chief of Air Tactics and Strategy at the Air Corps Tactical School (ACTS) from 1933 to 1936, George codified his strategic air power theories, and thus demonstrated the motive for his contributions. With help from Laurence Kuter, Donald Wilson, and Haywood Hansell, George laid the intellectual groundwork for what became a fully articulated independent strategic air power theory. Serving first as chief of the Bombardment Branch and later as Director of the Department of Air Tactics and Strategy, George was responsible for bringing order to the quarrels between the different sections. Further, because many of the eventual leaders of the Army Air Corps during World War II were his students, George wielded considerable influence.

Finally, George took the opportunity to implement his strategic bombardment theory as the Chief of Air Staff for War Plans on the eve of World War II. Soon after George was appointed to this position, President Roosevelt asked for an estimate of the production requirements required to "defeat our potential enemies." George, fearing the War Department would base such an estimate on tactical air strength alone, fought for, and eventually took responsibility for the plan. He recruited his former ACTS colleagues to help him develop what eventually became known as Air War Plans Division-1 (AWPD-1). As a result, for the first time in history the strategic component of air power became the principal air objective.

This paper is not intended to serve as a biography. General George had a varied and distinguished career. Many of his most important achievements, including the formation

of Air Transport Command, will not be addressed at all. Rather, this paper emphasizes that portion of a brilliant career that serves a single thesis: General George was largely responsible for the development and practical application of the strategic air power theory used during World War II.

Notes

¹Harold L. George, transcript of oral history interview by Dr. Murray Green, 16 March 1970, (168.7326–169, AFHRA), 30.

Chapter 2

Credibility: The Early Years

During the early part of his career, General George lived just outside of mainstream air power history. Though he never *made* history, he was played a significant part in it. George served as a bomber pilot in World War I, participated in the sinking of the Ostfriesland in 1921, and testified at the Mitchell court-martial in 1925. More importantly, through the rich experiences and associations of his early career, George forged a common bond with the Army Air Corps' founding elite that enabled his later contributions to strategic air power.

World War I

Harold George resigned his commission as a second lieutenant of cavalry on 21 May 1917 to take flight training. He was awarded his pilot's wings in March of 1918 and commissioned a second lieutenant in the Air Service.¹ That same month, the General Staff in Washington canceled the movement of all Air Service personnel to Europe, as it was deemed necessary to reserve tonnage for ground troops. Air Service protests were rendered inconsequential by a massive German offensive on 21 March 1918. For weeks no Air Service supplies or personnel were moved to Europe. Ultimately, this action slowed the air program in Europe by approximately four months.²

Lieutenant George was finally sent to France in September of 1918, and initially assigned to the 7th Aviation Instruction Center at Clermont–Ferrand.³ The 7th Aviation Instruction Center was one of two, large flying centers in France that were American owned and operated. The normal course of instruction, consisting of aircraft qualification and tactics training, lasted about two months.⁴ Lieutenant George joined the 163rd Bombardment Squadron, 2nd Day Bombardment Group, on the Meuse–Argonne front in early November.⁵

The 163rd Bombardment Squadron was activated on 5 November 1918. The unit flew 69 sorties during its seven days of active service before the Armistice was signed. The squadron was made up largely of men who had served in other French or American squadrons, but was unable to translate its experience into tangible results because of its short period of operation.⁶ When the war ended on 11 November 1918, Lieutenant George was one of 757 United States pilots on the front lines.⁷

A Common Bond

Even though his service in France was short, George built a common bond with a group of air power elite that would serve him well throughout his career. When Lieutenant George arrived in France, Brig Gen Mason M. Patrick was Chief of Air Service, American Expeditionary Forces, Brig Gen Benjamin D. Foulois was Chief of Air Service, 1st Army, and Col William A. Mitchell was Chief of Air Service, 1st Army Corps.⁸ The British air forces were led by Gen Hugh Trenchard. As a lieutenant, George was not in direct contact with any of these air service legends. He did, however, experience their leadership first-hand, and was certainly influenced by their personalities.

An important part of this common bond was George's aviation experience. When George began flight training in 1918, eight pilots per day were killed in training accidents in America alone. His airplane, the DeHavilland DH-4 earned a reputation as a flaming coffin because of the gas tank between the pilot and the observer.⁹ Though he came through the war without incident, he was eventually involved in at least six aircraft accidents and was seriously injured on one occasion. He was never found at fault in any of these accidents. It was simply part the daily hazards of early aviation (see figure B.1).¹⁰

Doctrine and Tactics

Early Air Service doctrine and tactics began to emerge in the late stages of World War I, and George would later adopt many aspects of both into his approach to strategic air power. Two key elements of Air Service doctrine were evident by 1920. First, the Air Service began to seek a coequal status. According to *Brief History of the Air Service (1920)*,

Today the Air Service has come to be an integral, combat arm, a force coordinate with and equal to other combat arms, such as the Artillery and Cavalry, each of which serves independently, and as an auxiliary to the infantry, in accomplishing the purpose of the team as a whole—the Army. Today there are none who will deny that defeat is certain without adequate aerial forces.¹¹

Second, the role of strategic air power began to take form. The same 1920 report listed the functions of the modern Air Service as clearing the path of advance of obstacles, adjusting artillery fire, reconnaissance, destruction of enemy aerial forces, destruction of enemy ground troops, supplies, and communications, “and almost more far-reaching than any other function, the Air Service in every way possible shatters the morale of the enemy and deadens his impulse to resist.”¹²

Perhaps even more importantly, the tactics practiced by George on the western front later became the strategic bombing fundamentals of World War II. In the late stages of World War I, the Germans made every effort to counter day bombardment, especially on the Meuse–Argonne Front. To reduce casualties, the allies developed formation flying to a high degree. They began to attack objectives with entire groups, instead of with a single squadron. Cooperation with pursuit was likewise developed, decreasing American losses and increasing those of the enemy.¹³

Impressions

War tends to shape a soldier's perception of life, and World War I was an especially bloody war. George was stationed on the Meuse–Argonne line in the heart of the western front. By the time he arrived, an army of over one million men was engaged along a 120 kilometer line in one of the most desperate battles in history. George had to have been influenced by both the tremendous human cost of trench warfare, as well as by the war's economic and psychological effects on the European populace.

Ostfriesland

Billy Mitchell, in an effort to prove the effectiveness of aerial bombardment against naval targets, assembled the most experienced pilots he could find at Langley Field in the summer of 1921. Because of his wartime experience, George joined Mitchell's squadron in June of 1921.¹⁴ While participating in the battleship tests, George was drawn intimately under the spell and enthusiasm of Billy Mitchell.¹⁵ In George's words,

We were youngsters. We were pilots. All we wanted to do was fly. Mitchell would tell us what he wanted to do and he would give us talks on air power. He would tell us, 'you are going to try to hit it [Ostfriesland],

but the best place is to put the bombs right along side for the water hammer effect.' We listened. He was right as always.¹⁶

George developed an important personal relationship with Mitchell that would serve him well later in his career. He also learned first hand how *not* to deal with the Department of the Navy. Throughout the Ostfriesland bombing tests, the Navy inspectors tightly regulated the type and number of bombs that Mitchell's airmen were allowed to drop. When it looked as though Mitchell might be successful, the Navy changed the rules. On 21 July 1921, despite a Navy demand that he use only three bombs, Mitchell and his wingmen left Langley with eight. The crews attacked until they secured two hits. The fifth large bomb sank the ship by its stern.¹⁷ In the end George drew two conclusions about Mitchell, he was usually right and he never compromised.¹⁸

Mitchell Court–Martial

Air Staff

Because of his World War I experience, Lieutenant George was sent to Washington in August of 1925 as Chief of the Bomb Section in the Air Corps' Operations Division.¹⁹ He reported to Maj Carl Spaatz and worked with Maj Ira Eaker and Maj Robert Olds. Other division leaders included Maj Conger Pratt and Major Herb Dargue. General Arnold was in charge of the Information Division.²⁰ George worked with these air power legends for almost four years, but the defining event of his tour was the Mitchell court-martial.

According to George, very few of Mitchell's contemporaries were willing to risk what Mitchell was risking, though they agreed with what he was trying to accomplish.

Spaatz and Arnold were the exception. Not only did they testify, but both also helped with the late-night strategy sessions. Because he was in Washington, George was asked to be a witness. According to George, most of those who openly supported Mitchell were junior officers,

We didn't know enough about whether you should keep your mouth shut or not. The attitude was what could they do? We could go get another job. Ranking people didn't want to risk trouble and I can understand.²¹

Proceedings

By the time George testified, the court-martial had adopted a circus atmosphere. Mrs. Mitchell was busy reading mail and telegrams during many of the sessions, leafing through large bags of correspondence from well-wishers. The generals that served on the court strolled in late, bowing and speaking to Mitchell.²²

The testimony of Lieutenant George supported the overall theme of the trial. First he declared that recently, over protests of the airmen, the lives of Mitchell Field aviators were needlessly endangered in searchlight practice at Camp Dix, New Jersey. He went on to disclose a report of recent bombing tests at Langley Field, the results of which he declared to be “the most remarkable in the history of aviation.” A target the size of the dreadnought California’s gun deck was hit from 3,000 feet 75 percent of the time and from 8,000 feet 50 percent of the time.²³ Finally, George told of towing a target back and forth, taking evasive action in an effort to avoid fire from guns below,

‘I did it for about an hour and came down and asked how things were going along. And the colonel who was running this anti-aircraft gun told me that he had quit long before...He said to operate the gun was like trying to pat his head with one hand and rub his stomach with the other.’ The crowd roared.²⁴

By 1930, George had established his professional competence as a pilot and a staff officer. He had experienced the devastation of World War I and the success of sinking the Ostfriesland. He had experienced the charm of General Mitchell, and demonstrated his loyalty at Mitchell's court-martial. Most importantly, George had developed a common bond with air power's founding elite. A bond that would later give him the opportunity and credibility to make an impact.

Notes

¹Flint O. DuPre, *U.S. Air Force Biographical Dictionary* (New York: Franklin Watts, Inc., 1965), 84–85.

²“Brief History of the Air Service,” American Expeditionary Force History Division Information Group, 1 July 20 (168.65011–8, AFHRA), 6.

³DuPre, 84–85.

⁴“Brief History of the Air Service,” 9.

⁵DuPre, 84–85.

⁶“Brief History of the Air Service,” 20.

⁷Ibid., 12.

⁸Ibid., 7.

⁹Maj Reuben H. Fleet, transcript of oral history interview, 19 March 1970 (168.7326–19, AFHRA), frame 19.

¹⁰“Aircraft Accident Reports,” 4 December 1925 (200.3912–1, AFHRA), 1–5.

¹¹“Brief History of the Air Service,” 12.

¹²Ibid., 12.

¹³Ibid., 17–19.

¹⁴Haywood S. Hansell Jr., “Harold L. George: Apostle of Air Power” in *Makers of the United States Air Force*, edited by John L. Frisbee, (Washington, D.C.: Office of Air Force History, 1987), 75.

¹⁵Haywood S. Hansell Jr., *The Air Plan that Defeated Hitler* (Atlanta, Ga: Higgins–McArthur, 1972), 9.

¹⁶Harold L. George, transcript of oral history interview by Dr. Murray Green, 16 March 1970 (168.7326–169, AFHRA), 27–28.

¹⁷Davis Burke, *The Billy Mitchell Affair* (New York: Random House, 1967), 106–108.

¹⁸George, oral history interview, 27–28.

¹⁹DuPre, 85.

²⁰George, oral history interview, 5–6.

²¹Ibid., 5–6.

²²Burke, 266.

Notes

²³“Foley Urged a Lie, Judges are Told by Mrs. Lansdowne,” *New York Times*, 13 November 1925, 1–2.

²⁴Burke, 266.

Chapter 3

Motive: Air Corps Tactical School

Maj Harold L. George was assigned to the Air Corps Tactical School (ACTS) as a student in 1931. He graduated in June of 1932, and went on to serve for four years as an instructor. He was soon chosen to head the Bombardment Branch, and by 1934 headed the Department of Air Tactics and Strategy, which included all branches of aviation. Each section chief was king in their own area, and until George was appointed head of the Department of Air Tactics and Strategy, there was no governing concept or coordination between sections.¹ During his tenure, George, with the help of his fellow instructors, codified the teachings of Mitchell and Douhet, translating their doctrine into a specific strategic concept. Most importantly, George laid the intellectual groundwork for what would eventually become a fully–articulated, independent strategic air power theory.

Theory

It is important to note that the ACTS instructors did not develop doctrine. Rather, they modified and adapted it with advanced ideas. According to General Eaker, information flowed from the field to ACTS, “Instructors did not formulate tactics and strategy, they codified them.”² For this reason, the strategic bombardment theory

developed by George must be examined in light of the influences of the dominant air power theorists and the army policies of the time.

Influences

While the theories of Guilio Douhet had some influence at ACTS, Mitchell was the predominant influence. This point is not without debate, however. General Eaker, for example, indicated that Douhet had considerable influence at ACTS, but stated that Trenchard had even more.³ Kuter, on the other hand, denied that Douhet had any considerable influence.⁴ He went on to state that Mitchell's notes on the "Multi-Motored Bombardment Group, Day and Night" formed their basis of instruction. This position is supported by the fact that Douhet's doctrine of mass area bombing at night was at odds with the ACTS concept of daylight precision bombing.⁵ Further, Douhet proposed the direct attack of cities and their populations. The school opposed this approach for moral reasons, choosing instead to focus on the destruction of the enemy's industrial structure.⁶

Policy

Army policy at the time was that aviation was an auxiliary of the army, coequal with other combat arms such as artillery and cavalry. The school policy was much more ambitious, and the actual teachings, by Army standards, were extreme.

The most reasonable view from the perspective of the Army was given by Gen George C. Marshall. Even though he was to become one of the three men outside of the Air Corps most helpful in building a vast air force, Marshall never accepted the "victory-through-air-power" concept. Every year he gave the same speech at ACTS. He cautioned young pilots, "military victories are not gained by a single arm—though failures

of an arm or service might well be disastrous — but are achieved through the efforts of all arms and services welded into a team.”⁷

The official Air Corps doctrine taught at ACTS was much more ambitious. The official school position was that land, sea, and air branches were capable of operating independently. Each possessed powers and advantages not possessed by the others, along with the ability to influence a war in a decisive fashion. The purpose of military power, however, was the defeat of an enemy’s armed forces, the occupation of his territory, or operations against his vital centers. The school policy stated, “An aerial force is the only component of a nation’s armed forces that can participate to an important degree in all of these operations.”⁸ Further, the policy stated that bombardment provides the greatest fire power of any component of an aerial force. As such, the plans for the employment of the other components of aviation—pursuit, attack, and observation—must be subordinated to those of bombardment.⁹

Official Air Corps doctrine walked a fine line with the army that the ACTS instructors routinely crossed. On one occasion, Lt Laurence Kuter presented a lecture at ACTS not in harmony with the views of the Navy. The Secretary of the Navy eventually demanded that he receive a public reprimand, and the ACTS Commandant delivered it before the staff, faculty, and students. According to Kuter, however, his supervisor, Major George, backed him completely by ensuring no mention was made of the incident in Kuter’s official records.¹⁰

Plan Development

Even from the beginning, George’s lectures at ACTS stressed the interdependence of an industrialized economy and the effects that strategic bombing would have on that

economy. At the same time, Lieutenant Wilson was working to establish the importance of vital transportation centers. Wilson's thesis, supported by detailed planning, was that if a few vital transportation centers were eliminated, the entire transportation system would fail due to cascading effects. George sought to merge Wilson's work with his own. He set out to demonstrate that the destruction of a few vital targets could bring about the collapse of an entire economy.¹¹ The problem was complicated because it presumed knowledge about a nation which that nation naturally tried to hide. To avoid this problem, George laid out the methodology using the United States as the target.¹²

Lecture

The foundation of George's approach to strategic bombardment is best summarized by a lecture he gave to every class at ACTS beginning in 1933. This lecture opened the bombardment portion of the curriculum, and sought to answer several basic questions on war. This lecture is paraphrased in the following paragraphs.

Introduction. We shall attempt to develop, logically, the role of air power in future wars. We are not concerned in fighting the past war, rather with how air power should be employed in the next war, and what constitutes the principles governing its employment. We realize that air power has not proven itself under the actual test of war. We must also realize that neither land power nor sea power has proven itself in the face of modern air power. Therefore, has the advent of air power brought into existence a method for the prosecution of war which has revolutionized that art, and given to air forces a strategic objective of their own, or is it merely another weapon? We are not interested in dogmatism or unsupported opinion, but study and research. We are searching for the truth and not asking you to believe simply because you think we believe.¹³

What is war? War is resorted to by nations to insure two conditions: prosperity and security.¹⁴

Why does war occur? Nations compete at the expense of other nations. Frequently, nations are unable to secure the things they consider essential by peaceful means. Thus, the peace-time machinery fails to enable a nation to continue those policies which it considers essential for their security and prosperity.¹⁵

What is the object of war? The object of war is to compel an enemy to accept our policies, to overcome their national will.¹⁶

How has war been waged in the past and why? Wars are waged only through the application of sufficient pressure to compel acceptance. In the past this was done by defeating the defending army, moving into the adversary's territory, occupying it, and exerting the pressure necessary to break the enemy's will. "The destruction of [the] military forces of the enemy is not and never has been the objective of war; it has been merely a means to an end,—merely the removal of an obstacle which lay in the path of overcoming the will to resist. The end was the breaking of the hostile will."¹⁷

Is it to the advantage of a civilization to change the past method of waging war? In the Great War, modern inventions such as the machine gun, rapid-fire cannon, and gas, served to strengthen the defense, and 10 million men died as a result. Another siege war might mean a breakdown of civilization itself. A speedy war would be better for the entire world as it would ultimately lessen the destruction of lives and property.¹⁸

Has modern civilization reduced or increased the vulnerability of nations? The trend in modern nations has been toward specialization in industry. Many factories now depend on electrical power and a supply of raw materials. Modern nations are much more

vulnerable because of the existence of the economic structure which our present civilization has created.¹⁹

Has science and invention provided a new method of waging war? This is a question you will have to decide for yourself as this course progresses. Airplanes are now capable of tremendous destruction and range. Mountains, oceans, and deserts are no longer obstacles. There are no trenches or barbed wire in the sky. Air power has given to the world a means whereby the heart of a nation can be attacked at once without first having to wage an exhausting war at that nation's frontier. "Whether air power can, by and of itself, accomplish the whole object of war is an academic question; but that the air phase of a future war between major powers will be the decisive phase seems to be accepted as more and more plausible as each year passes."²⁰

Testimony

George presented a more refined version of his strategic bombing theory before the Federal Aviation Commission in 1934. This commission was one of many periodic investigations called to ease public concerns over the rough handling of air power by the Army and Navy. President Roosevelt tasked the Federal Aviation Commission to "make an immediate study covering all phases of aviation and report its recommendations to Congress."²¹

In late November of 1934, the commission called six ACTS instructors to testify. Their names had been furnished by Congressman J. Mark Wilcox, who believed that the men would concentrate on the basic issues. The War Department authorized the airmen to testify, but initially refused to cover their expenses. According to the War Department, their appearance was entirely voluntary. They could give their personal views if requested

to do so, but if these views differed from approved policy, the men were ordered to make the distinction clear. The War Department's liaison, Maj Gen C. E. Kilbourne, attended the briefings, along with two War Department secretaries to record the testimony.²²

The first portion of George's testimony drew heavily from his ACTS bombardment lecture. He emphasized that the object of war is overcoming an enemy's hostile will to resist, and that air power has given us the means to attack that will directly without first defeating the enemy's surface forces. He emphasized that air power is not a new weapon, but a new method for waging war.²³

George went on to describe offensive and defensive classes of aviation. He explained that the only way to defend against an enemy air force is to seek out the enemy's air bases and destroy his planes on the ground. Because of this, bombers are offensive weapons while pursuit aircraft are purely defensive weapons. Further, "the spectacle of huge air forces meeting in the air is the figment of imagination of the uninitiated." Therefore, the nation which devotes the largest percentage of its air force to the offensive, or the bomber, will be the nation best prepared to wage war.²⁴

George then moved into the heart of his testimony, stating that a separate Air Force is more important now than a separate Navy was in 1798. The defeat of the Navy would not result in the defeat of our nation, but a hostile air force could paralyze our industrial and economic life. George explained that to be effective, a hostile air force would not attack our centers of population, but our vital industrial areas. In a classified session, George then presented the list of United States vital points he and his fellow instructors had developed at ACTS. These vital points included rail lines, refineries, electrical power, and

key industries. Explaining the cascading effects of their destruction, he testified that no nation could continue with its economic and financial structure paralyzed.²⁵

George concluded his testimony by detailing his proposal for an independent Air Force. This Air Force would include all non–naval aviation assets, and in wartime fall under the command of supreme commander designated by the Secretary of War. Such an independent Air Force would be unhindered by an organization whose entire experience and education had been along the lines of ground warfare.²⁶

Bomber Versus Pursuit

An important part of the debate at ACTS while George was an instructor centered on the relative importance of bomber and pursuit aircraft. This debate, shaped both by the technology and personalities of the time, would eventually become the subject of much controversy.

Technology

ACTS sought to sponsor a doctrine calling for escort fighters, but the fighter experts asserted that a fighter with the range to accompany a bomber would be so large that short–range interceptors could easily out fly and outfight it.²⁷ Tremendous strides in bomber development tended to support that assertion. The recently developed B–17, for example flew at 250 mph, while the fastest pursuit aircraft at that time, the P–26 flew at only 220 mph. This led many to believe the bombers of the future would be able to outrun pursuit aircraft, and as a result, be able to fly their missions unescorted.²⁸ Further, because pursuit could not guarantee immunity from hostile air attack, the only way to gain control of the air was through a determined bomber offensive.²⁹

George indicated that he was open to the need for a long-range fighter, but there was no such fighter available. In November of 1930 George served on an experimental test board with Carl Spaatz. That board recommended,

It is believed unsound to neglect the development of what might be termed the more or less conventional pursuit airplane, which now form the bulk of the pursuit forces of this and other nations. The present apparent optimistic outlook for high speeds in day bombers and attack airplanes necessitates higher speed in pursuit.³⁰

Unfortunately, the daunting technical challenges of a long-range, maneuverable fighter were not overcome until drop tanks proved their worth nearly 14 years later.

Personalities

Because almost all airmen believed in the airplane as an offensive weapon, the bomber was the darling of the corps. No one argued the fighter was superfluous, but many thought its future was limited.³¹ Claire Chennault was *not* one of them.

Chennault and George were rivals at ACTS. Chennault was extremely aggressive and had tremendous confidence in his own ability. That confidence rose above vanity. He simply believed in himself.³² Unfortunately, because of his abrasive personality, Chennault never reached many students, or even instructors.³³

When the B-10, and later the B-17 were developed, the bomber advocates were able to answer Chennault's arguments. Chennault was not convinced, however.³⁴ He believed that that defending pursuit aircraft could intercept attacking bombers if furnished with timely information concerning their position, and if the pursuit aircraft were deployed in sufficient depth.³⁵ George, on the other hand, felt there could be no effective defense in the air against mass bomber attacks. He did support the development of long-range escort fighters to minimize losses, but few could visualize a single-seat pursuit fighter with

the range of a heavy bomber.³⁶ Chennault himself even opposed such designs, favoring instead short-range, high-performance interceptors.³⁷

Consequences

The instructors at ACTS, including George, have been criticized for not sensing the need for a long-range escort plane, but the condemnation is far from universal. According to Finney in *History of the Air Corps Tactical School*, a shortage of funds and the belief that bombers should be given priority, slowed pursuit development. Finney stated, “Possibly had they [the ACTS instructors] insisted that the strategic air war would be dependent on fighter escort for the bombers, the engineering difficulties in producing such a plane would have been overcome sooner.”³⁸ Eaker and Spaatz disagreed. When asked if the development of strategic bombing led to the neglect of pursuit, Eaker responded, “No, they came along coequally and coincidentally. In fact, pursuit was the prima donna service in the Army Air Corps.”³⁹ Spaatz felt that the Air Corps favored the bomber over the fighter, but we had no fighter at that time that could go as far as the bombers and return. When asked if it would have been possible to develop a long-range fighter earlier had we put more emphasis on it, Spaatz responded:

There were fighters developed right along. Industry had their best men doing it. I’m not sure we would have gotten it much faster. The Mustang didn’t come out of the blue in 1944. They were on the drawing board earlier.⁴⁰

Students and Faculty

By virtue of his position at ACTS, George wielded enormous influence. Most of the eventual air commanders of World War II would pass through the school’s portals during

his tenure. Of the 320 general officers in the Army Air Corps at end of World War II, 261 were ACTS graduates. This total included three 4-star generals: McNarney, Kenney, and Spaatz, and eleven of thirteen 3-stars generals: Emmons, Brett, Yount, Eaker, Giles, George, Cannon, Vandenberg, Stratemeyer, Twining, and Whitehead. Also among the elite graduates were numerous wartime casualties: Duncan, Andrews, George (H. H.), Walker, Tinker, Forrest, and Ramey.⁴¹

General Eaker had this to say about Harold George, “As one of his students in 1935, I can testify to the remarkable success he and his associates had on the codification and teachings of US Air Strategy.” According to Eaker, George was not an original disciple of air power, like Mitchell or Trenchard. Instead, George was a Moses, bringing the teachings to the people who needed to use it.⁴²

Conclusions

George’s greatest contribution was the attainment of a new perspective. He took the teachings of Mitchell, Douhet, and Clausewitz, and combined them with a complete operational analysis of the modern industrial economy. He did this at a time when the Army believed that the sole mission of the Air Corps was to support ground operations. His theory was not flawless, but more than anyone else, George laid the intellectual groundwork for what would become a fully articulated independent strategic air power theory.

Notes

¹Haywood S. Hansell Jr., “Harold L. George: Apostle of Air Power” in *Makers of the United States Air Force*, edited by John L. Frisbee (Washington, D.C.: Office of Air Force History, 1987, 76–77.

Notes

²Lt Gen Ira C. Eaker, transcript of an oral history interview by Cadet Tobin, March 1974, (K239.0512-755, AFHRA), 8–10.

³Ibid., 10.

⁴Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm 1917–1941* (Washington, D.C.: Office of Air Force History, 1985), 51–60.

⁵Robert T. Finney, *History of the Air Corps Tactical School 1920–1940* (Washington, D.C.: Center for Air Force History, 1992), 56–58.

⁶Haywood S. Hansell Jr., *The Strategic Air War Against Germany and Japan* (Washington, D.C.: Office of Air Force History, 1986), 13.

⁷Ed Cray, *General of the Army: George C. Marshall Soldier and Statesman* (New York: W.W. Norton and Company, 1990), 130.

⁸Col C.C. Culver, commandant, Air Service Tactical School, to Chief of Air Corps, letter, subject: Doctrine of Employing an Aerial Force, 3 September 1928 (248.121–1, AFHRA), 1–2.

⁹Ibid., 1–2.

¹⁰Gen Laurence S. Kuter to Gen Ira C. Eaker, letter, subject: US Air Force Academy Commemoration of Harold L. George, 15 August 1972 (168.7126, AFHRA), 1.

¹¹Thomas A. Hughes, *Over Lord: General Pete Quesada and the Triumph of Tactical Air Power in World War II* (New York: The Free Press, 1995), 54.

¹²Hansel, *The Strategic Air War*, 19–22.

¹³Lt Col Harold L. George, “An Inquiry into the Subject of War,” lecture, Air Corps Tactical School, Maxwell Field, Ala., 1933 (248.11–9, AFHRA), 1–3.

¹⁴Ibid., 4.

¹⁵Ibid., 4.

¹⁶Ibid., 4.

¹⁷Ibid., 5–7.

¹⁸Ibid., 8.

¹⁹Ibid., 8.

²⁰Ibid., 9.

²¹H. Dwight Griffin and others, *Air Corps Tactical School: The Untold Story* (Air Command and Staff College, Maxwell AFB, Ala: US Government Printing Office, May 1985), 6–7.

²²Martha Byrd, *Chennault: Giving Wings to the Tiger* (Tuscaloosa, Ala: University of Alabama Press, 1987), 53.

²³Testimony Presented by Capt Harold Lee George before the Federal Aviation Commission, 1934 (248.121–3, AFHRA), 1–2.

²⁴Ibid., 5–6.

²⁵Ibid., 7–9.

²⁶Ibid., 12–14.

²⁷Hansell, *The Strategic Air War*, 14.

²⁸Thomas M. Coffey, *Hap: The Story of the US Air Force and the Man who Built It, General Henry H. Hap Arnold* (New York: The Viking Press, 1982), 168.

²⁹Finney, 65–68.

Notes

³⁰Carl A. Spaatz, “Proceedings of a Board of Officers for the Purpose of Testing the XP-16 Experimental Two-Seater Pursuit Airplane and Reporting on the Same,” Wright Field, Ohio, 3 November 30 (248.122–3, AFHRA), 11.

³¹Coffey, 197.

³²Haywood S. Hansell Jr., *The Air Plan that Defeated Hitler* (Atlanta, Ga.: Higgins–McArthur, 1972), 20–22.

³³Hughes, 57.

³⁴Hansell, *The Air Plan that Defeated Hitler*, 20–22.

³⁵Claire L. Chennault, *Way of a Fighter: The Memoirs of Claire Lee Chennault*, edited by Robert Hotz (New York: G.P. Putman’s Sons, 1949), 23–24.

³⁶Greer, 60.

³⁷Hansell, “Harold L. George: Apostle of Air Power”, 78–80.

³⁸Finney, 77–78.

³⁹Eaker, oral history interview, 23.

⁴⁰Carl A. Spaatz, transcript of an oral history interview by Arthur Goldberg, 19 May 1965 (K239.0512–755, AFHRA), 10–11.

⁴¹Finney, 43.

⁴²Ira C. Eaker, transcript of a speech commemorating Harold L. George at the U.S. Air Force Academy, 15 September 1972 (168.7126, AFHRA), 1.

Chapter 4

Opportunity: Air War Plans Division

Background

Assignment

On 9 July 1941, two weeks after Hitler invaded Russia, Harold George reported to his new position as Chief of Air Staff for War Plans. During his short tenure in this position, George put the strategic bombing theory he developed at ACTS into practice. Unshaken by the lessons learned from the war in Europe to that time, George won the right to develop a plan, built a team consisting of his former ACTS colleagues, and wrote an air plan he believed could decide the outcome of the war. The air plan George and his former ACTS colleagues developed over the course of one week in August of 1941 irrevocably committed the United States Army Air Corps to strategic bombing in World War II.

Lessons from Europe 1939 to 1941

George's approach to strategic bombing theory in 1941 had not changed significantly since his tenure as an ACTS instructor, but he and others had drawn mixed conclusions from the war in Europe to that point. Both George and Arnold were disturbed by the fact that German fighters shot down Polish bombers en masse in 1939. In late 1939 Arnold

called on Maj Gen Delos Emmons to submit a study on the vulnerability of the bomber. George testified, "There is no question in my mind but that American bombardment units could not today defend themselves against American pursuit units."¹ George cautioned against a switch to night tactics that would have undermined strategic bombing theory, however, recommending instead additional gun installations and better gunnery training.²

Faced with the technical challenges involved in designing a long-range fighter, most drew encouragement from the belief that the Polish and German bombers were doomed by their poor performance and inadequate armament.³ As a result, the B-17C was almost completely redesigned with more powerful engines, a greater bomb load, power-operated gun turrets, protective armor, and self sealing fuel tanks⁴

George felt that Germany had not been successful against Britain because it did not properly employ bombardment aviation. The Germans dropped bombs over large areas at night, greatly limiting their ability to destroy key points. George felt that the effectiveness of strategic bombardment was dependent upon the accuracy afforded by daylight operations. Further, the German bomber was not equipped with sufficient machine guns or armor to protect itself, and was not fast enough to avoid combat.⁵

George was not alone in his beliefs. General Spaatz, an official observer at the Battle of Britain, thought the bomber could succeed, but recommended a serious effort to develop an escort fighter.⁶ General Arnold, after observing the destruction in Britain, wrote,

Certainly destruction by air power could make a landing of ground forces possible. The Navy could insure the existence of England, but air power and air power alone could carry the war home to central Germany, break down her morale, and take away from her the things essential to combat. If

several hundred bombers could wreak this much havoc on London, what would a fleet of one thousand do to it?⁷

George's answer to the strategic bombing uncertainty was a better, more capable bomber. George, in a 1941 magazine article wrote, "The bomber of tomorrow will have adequate armor and gun fire to protect itself from the fighter airplane."⁸

Plan Development

Taking Control

In July of 1941 Roosevelt made a secret request to Secretary of War Henry Stimson for the "overall production requirements required to defeat our potential enemies."⁹ Without the intervention of Harold George, the air portion of this estimate would have been written by the Army-dominated War Department Plans Division. Few at the time realized that the opportunity George was about to grasp would be as important in its ramifications as the reorganization of the air arm itself.¹⁰

The President wanted his estimate in a month. Army War Plans Chief, Brig Gen Leonard T. Gerow appointed Lt Col Albert C. Wedemeyer to head the group that would prepare the estimate. Wedemeyer expected Lieutenant Colonel Bissell, the ranking air officer in the War Plans Division, to prepare the air annex. Bissell realized he could not complete the task alone, and asked Gerow to call Arnold, then Deputy Chief of Staff for Air, and ask for help.¹¹ Arnold informed George of the situation. George was adamant that the air annex be prepared in his division rather than by the War Department.¹² If the War Department was allowed to prepare the Air Annex, the emphasis was bound to be on tactical air strength as an auxiliary to support the troops. The Army would base its air

power estimates on the size of the ground forces it had to defeat. George wanted to base the estimates on the industrial and economic vulnerability of Germany and Japan.¹³

Arnold cagily suggested to Gerow that the Air Staff take responsibility for the air annex to the plan. Gerow accepted the proposal, requiring only that Arnold plan for a defensive war with Japan until Germany was defeated. George had his chance. For the first time in history, the strategic component of air power became the principal air objective.¹⁴

Building the Team

Before George could write an air plan, he had to build a staff. When George began his tour, Lt Col Kenneth Walker was the sole member of the Air Staff's War Plans Division. George immediately convinced Brig Gen Carl Spaatz, Chief of the Air Staff, to have Maj Haywood Hansell assigned there as well.¹⁵ George was also able to have Maj Larry Kuter assigned to his division for the time it would take to develop the plan.¹⁶ The same foursome that had war-gamed their plan so many times at ACTS now had the chance to try it for real.

Building the Plan

George sought to determine the kind of air power it would take to destroy Germany's means of waging an effective war and ultimately its will to resist. Because official Army doctrine did not recognize the potential decisiveness of strategic air warfare, the team also had to consider how far they could go and still have some chance that their plan would be seriously considered. They ultimately decided a case could be made for an all-out strategic air warfare offensive provided that it was supported by extensive analysis.¹⁷

By the time George's team was in place, they had just over one week to complete their plan. The task was daunting. The War Plans Division had never before undertaken a study of the industrial and economic vulnerability of Germany and Japan from the point of view of aerial attack. Fortunately, George's team had started the job at ACTS, and Hansell had continued the project over the past two years as head of the Air Intelligence Section. The intelligence he had gathered now proved essential.¹⁸

George felt the Army would not be ready to fight in Europe for two years, but the Air Corps would be ready much sooner. He therefore decided that a successful air war to defeat the Luftwaffe was necessary before an invasion could be undertaken. Also, Germany was supporting the greatest military operation of all time against Russia, and was vulnerable to air attack.¹⁹ Seeking to exploit this vulnerability, George's team made their primary objective the destruction of Germany's electrical power system, transportation, oil, and contiguous with all three, the destruction of Luftwaffe interceptor defenses.²⁰

The decision to rely on daylight bombing was more problematic. Many, especially the British, believed that the bomber could not get through to German targets in daylight. George's team believed, however, that they would not be able to get the necessary accuracy at night, and in the end increased their attrition figures accordingly.²¹

It is important to note that while George and his assistants were developing their plan, General Arnold was in Newfoundland participating in secret policy discussions with President Roosevelt and Prime Minister Churchill.²² Arnold did not return until after the air annex was complete. Thus, with few prescribed national objectives and minimal guidance, Harold George and his Air War Plans Division staff put into practice a new concept of air power.

Final Report

The final plan was named Air War Plans Division–1 (AWPD–1). The plan's stated objective was,

To conduct a sustained, unremitting air offensive against Germany and Italy to destroy the will and capability of Germany and Italy to continue the war; and to make an invasion either unnecessary or feasible without excessive cost.²³

As such, the plan called for the following priorities: (1) air operations in defense of the western hemisphere, (2) air offensive against Germany, (3) strategic defense in the Pacific, (4) air support for the invasion of Europe, and (5) after victory in Europe, air offensive against Japan.²⁴

The plan required that 154 key targets be destroyed and kept out of operation for 6 months. Each target was analyzed for the proper size bomb and the number of hits required for destruction. The number of drops required to obtain a 90 percent probability of destruction based on a error of 1,250 feet was then computed and multiplied by 2.25 over peacetime numbers. George's staff studied British weather forecasts to determine the number of daylight operations possible each month, and even estimated the number of mechanical aborts. Using this data, they estimated the total number of bombers needed, assuming the force would have to maintain full strength for six months with a 100 percent attrition of the entire combat force every five months. The plan also estimated the number of fighters required to achieve and maintain air supremacy in every theater. The plan called for 207 groups, 21,008 aircraft and 37,051 trainers for total 58,059 aircraft manned by 179,398 officers and 1.986 million enlisted men.²⁵

AWPD–1 also considered the need for long-range fighter escort. The report stated, “The question—is it feasible to make deep penetrations into German territory and conduct

precision bombing without prohibitive losses?—is vital to any consideration of a decisive air offensive in this war.” The plan goes on to say that until the arrival of the Stirling and the B-17, German fighters made daylight bomber operations in Europe prohibitively costly. The plan called for the use of all means of bomber protection, such as speed, altitude, defensive fire power, and armor. It also concluded, “An escort defensive fighter to accompany bomber formations to close off the rear avenue may be necessary.”²⁶ Unfortunately, when AWPD-1 was written there was not even a design on hand for an escort fighter with sufficient range to be useful.²⁷

Approval

The plan was submitted to the War Department General Staff at midnight on 11 August 1941. The air annex was completely out of proportion to the requirements brought forth by the Army and the Navy. It called for an expansion from a force of less than 100 B-17s to a force of over 59,000. The plan was making production demands at the expense of the other services.²⁸ To explain their proposal George decided they would put together a “Madison Avenue” kind of presentation with charts detailing the vital structure of Germany and what it would take to destroy it.²⁹

The team briefed Gen George C. Marshall, Chief of Staff of the Army, and General Arnold on 30 August 1941. The questions were sharp and contentious, but George was unwavering, “This is what it takes. If we are unwilling to provide it, we had better stay out of the war.”³⁰ In the end, General Marshall liked the plan and asked George to brief it to the Secretary and the Assistant Secretary of War. General Marshall had thus allowed George to circumvent the Joint Army–Navy Board where the Navy would have rejected it outright.³¹

On 11 September 1941, General George, accompanied only by General Marshall, briefed Secretary of War Stimson on what became known officially as AWPD-1. Secretary Stimson also liked the plan and told George to be prepared to present it to President Roosevelt. AWPD-1 was forwarded to the President on 25 September 1941, but unfortunately the briefing never took place.³²

Changes

George's meeting with the President was prevented by two events. On 4 December 1941, the Chicago Herald Tribune published AWPD-1 verbatim, and three days later, the Japanese attacked Pearl Harbor.³³

In 1941 the country had a president willing to go to war, and a citizenry that was not.³⁴ According to George, a senior presidential aid took a copy of AWPD-1 home so he could study it. He put the plan in his desk drawer and went out for the evening. Chesly Manly, a Chicago Tribune reporter opposed to Roosevelt's desires to enter the war, learned of AWPD-1. He followed the aid home, broke in after the aid left, and photographed the document.³⁵ The complete text of the plan was published the next day.

The repercussions while severe, could have been disastrous. Public opinion decried the proposed reorganization of our industrial machine as well as the lower standard of living and taxation that would result.³⁶ Isolationist congressmen demanded that action on defense bills be suspended until General Marshall was called for questioning.³⁷ Most importantly, secret British strengths, intentions, capabilities, and dispositions, were spread before the world.³⁸ Wilhelm Messerschmidt, the famed Nazi aircraft designer, read the newspaper reports, and was disturbed by the published aircraft production figures. He

asked Goering and Milch for large quantities of ME–262s to combat the planned strategic raids. Fortunately for the allies, most German officials discounted the newspaper reports and Messerschmidt was unsuccessful.³⁹

After Pearl Harbor, George served briefly as a member of the Joint Plans Committee while retaining his position as Chief of the Air Staff's Air War Plans Division. Three months later, in March of 1942, Arnold asked George to take over Ferrying Command. George wanted a bomber command, but Arnold replied,

Harold, I know all that. But what you don't know is that this is one of the finest opportunities you could possibly hope for. You're not leaving the strategic air business—you're entering it. This is an opportunity to establish the world's greatest air transportation system....Come back a year from now and if you still feel this way I'll get you a bomber command.⁴⁰

George immediately assumed his command. Ferrying Command became Air Transport Command (ATC) in June of 1942, and Lieutenant General George never again sought a bomber command, retiring as a lieutenant general in 1947.

Conclusions

Validity

Among the strategic plans at the War Department, only AWPD–1 retained its validity after Pearl Harbor. On 15 December 1941 George and his staff submitted a new “Air Estimate of the Situation and Recommendation for the Conduct of the War.” This revision proposed a general increase in bomber strength to account for the loss of sea power in the Pacific, and called for a marked increase in air transports.⁴¹ Follow-on staffs made other minor modifications, but AWPD–1 became the plan by which the Army Air

Force was created and developed. It also became and remained the established concept on which the American strategic air offensive was based.⁴²

Legacy

Over the course of seven days in August of 1941, three relatively junior officers—Hansell, Walker, and Kuter—led by Harold L. George gave a new role to the Army Air Corps. Until AWPD-1, aviation was a tool to assist ground or sea forces to accomplish their particular mission. Air power now had its own unique role.

Notes

¹Haywood S. Hansell Jr., “Harold L. George: Apostle of Air Power” in *Makers of the United States Air Force*, edited by John L. Frisbee (Washington, DC: Office of Air Force History, 1987), 82.

²Thomas H. Greer, *The Development of air Doctrine in the Army Air Arm 1917–1941* (Washington, DC: Office of Air Force History, 1985), 117.

³Hansell, “Harold L. George: Apostle of Air Power”, 82.

⁴Greer, 117.

⁵Harold L. George, “Bombardment,” *Flying and Popular Aviation*, 29, no. 3 (September 1941): 50–51.

⁶Hansell, “Harold L. George: Apostle of Air Power”, 82.

⁷DeWitt S. Copp, *Forged in Fire: Strategy and Decisions in the Air War Over Europe 1940–1945* (Garden City, NY: Doubleday and Co., Inc., 1982), 126.

⁸George, “Bombardment,” 50–51.

⁹Copp, *Forged in Fire*, 151.

¹⁰Ibid., 151.

¹¹Ibid., 152–154.

¹²Harold L. George, transcript of an oral history interview by Dr. Murray Green, 16 March 1970 (168.7326.169, AFHRA), 7–8.

¹³Copp, *Forged in Fire*, 152–154.

¹⁴Ibid., 152–154.

¹⁵George, oral history interview, 9.

¹⁶Ibid., 7–8.

¹⁷Haywood S. Hansell Jr., *The Air Plan that Defeated Hitler* (Atlanta, Ga: Higgins–McArthur, 1972), 70–75.

¹⁸DeWitt S. Copp, “The Pioneer Plan for Air War,” *Air Force Magazine* 65, no. 10 (October 1982): 159.

¹⁹Hansell, “Harold L. George: Apostle of Air Power,” 88–90.

²⁰Copp, *Forged in Fire*, 152–154.

Notes

- ²¹George, oral history interview, 19–27.
- ²²Copp, *Forged in Fire*, 156–157.
- ²³Hansell, “Harold L. George: Apostle of Air Power,” 88–90.
- ²⁴Hansell, *The Air Plan that Defeated Hitler*, 70–75.
- ²⁵Hansell, “Harold L. George: Apostle of Air Power,” 88–90.
- ²⁶Hansell, *The Air Plan that Defeated Hitler*, 307–309.
- ²⁷Copp, *Forged in Fire*, 174.
- ²⁸Ibid., 156–157.
- ²⁹George, oral history interview, 10.
- ³⁰Hansell, “Harold L. George: Apostle of Air Power,” 93.
- ³¹Copp, *Forged in Fire*, 156–157.
- ³²Ibid., 158.
- ³³Haywood S. Hansell Jr. to Ira C. Eaker, letter, 16 August 1972 (168.7126, AFHRA), frame 47.
- ³⁴Copp, “The Pioneer Plan for Air War,” 74.
- ³⁵George, oral history interview, 11–16.
- ³⁶“Hitler Defeat will Cost US 120 Billions,” *New York Times*, 5 December 1941, 3.
- ³⁷“Story of Plans for A.E.F. is Not Denied,” *New York Times*, 5 December 1941, 2.
- ³⁸Hansell, letter, frame 47.
- ³⁹Wilhelm Messerschmitt, summary of a post war interview, 11 May 1945 (570.625, AFHRA), 1.
- ⁴⁰Hansell, “Harold L. George: Apostle of Air Power,” 95.
- ⁴¹Hansell, *The Air Plan that Defeated Hitler*, 97.
- ⁴²Ibid., 96.

Chapter 5

Conclusion

The strategic bomber offensive in Europe remains a divisive issue. It has been criticized as ineffective, inefficient, and wasteful. The cost was certainly high. Regardless of its effectiveness, however, AWPD–1 marked a change in the course of air power history, and Harold George was largely responsible for that change.

AWPD–1 was developed in the early days of radar when flying over an enemy's armed forces and striking the vital elements of his homeland seemed simple and attractive. Strategic bombing, however, became a practical problem of immense dimensions. George used the best intelligence available and made careful, detailed estimates in prescribing a force structure to support his plan. The strategic deployment and employment of these forces, however, was the purview of the operational commanders.¹ While combat experience ultimately dictated a change in tactics, the basic strategic concept and doctrines stood up well.²

Lt Gen Harold L. George was largely responsible for the development and practical application of the strategic air power doctrine used during World War II. As a lieutenant, George developed the common bond with air power's founding elite that later gave him the opportunity and credibility to make an impact. As Chief of Air Tactics and Strategy at the Air Corps Tactical School from 1933 to 1936, George codified the teachings of

Mitchell and Douhet and combined them with a complete operational analysis of the modern industrial economy. His theory was not flawless, but more than anyone else, George provided the intellectual groundwork for what became a fully articulated independent strategic air theory. Finally, as the Chief of Air Staff for War Plans on the eve of World War II, George put the strategic bombing theory he developed at ACTS into practice. The air plan he and his former ACTS colleagues developed in 1941 irrevocably committed the United States Army Air Corps to strategic bombing in World War II.

Gen Haywood S. Hansell perhaps said it best,

The greatest American contribution to the *strategic concept* of air warfare, and its *practical application* in the plans for the first great air war,—the *concept* of undermining the enemy will and capacity to wage war through bombing of selected industrial, economic, and military systems; and the exposition and translation of that concept into a sound strategic plan in the face of strong opposition from entrenched proponents of surface warfare —was made by Harold Lee George.³

Notes

¹Haywood S. Hansell Jr. to Ira C. Eaker, letter, 16 August 1972 (168.7126, AFHRA), frame 47.

²Haywood S. Hansell Jr., *The Strategic Air War Against Germany and Japan* (Washington, DC: Office of Air Force History, 1986), 112–113.

³Haywood S. Hansell Jr., *The Air Plan that Defeated Hitler* (Atlanta, Ga: Higgins–McArthur, 1972), 278.

Appendix A

Biographical Sketch of Harold L. George

Harold Lee George was born in Somerville, Massachusetts, on 19 July 1893. He attended George Washington University and on 21 May 1917 was commissioned a lieutenant of Cavalry in the Officers Reserve Corps. He began active duty with the Cavalry at Fort Myer, Virginia, but resigned his commission in October 1917 to begin flight training. He studied aeronautics at Princeton and earned his wings at Love Field in Dallas, Texas, in March of 1918. George jointed the 7th Aviation Instruction Center in Clermont France in September, and two months later was assigned to the 163rd Bomb Squadron on the Meuse–Argone front.

After the war George was assigned to the 49th Bomb Squadron at Kelly Field, Texas. He joined the 14th Bomb Squadron at Langley Field , Virginia, in June of 1921 where he participated in the battleship tests of 1921 and 1922. From 1922 until 1925 George was assigned to the Aberdeen Proving Grounds where he tested new armaments and studied weapons effects. In August of 1925 George went to Washington as Chief of the Bomb Section in Air Corps' Operations Division. In July 1929 he was assigned to the 5th Composite Group in Hawaii where he remained for two years. George completed Air Corps Tactical School in 1931 and remained on staff as an instructor until 1936. He

graduated from the Command and General Staff School at Fort Leavenworth, Kansas, the following year.

George assumed command of the 96th Bomb Squadron at Langley in 1937. He then moved up to command the 2nd Bomb Group, the first unit to be equipped with the B-17 Flying Fortress. During his time at Langley, George participated in several good-will flights to South America. In July 1941 George was appointed Assistant Chief of Staff for War Plans where he headed a board of officers who prepared the plan for the air war against Germany.

George was promoted to brigadier general in April 1942 when he took command of what would soon be known as Air Transport Command (ATC). George led ATC brilliantly throughout World War II. Under his leadership, new organizations and trans-oceanic routes were established under austere conditions and in the face of enemy opposition. After the war, George served as Director of Information for the Air Force and as Senior Air Force Representative on the Military Staff of the United Nations.¹

George retired from active duty on 31 December 1946. He became vice president and general manager of the Hughes Aircraft Company and later vice president of the Thompson-Ramo Wooldridge Corporation. George was also a two-term mayor of Beverly Hills, California, and served as permanent Chairman of the Board of Directors of the Order of Daedalians, an organization he founded in 1933. George made his “last flight” on 24 February 1986, and was laid to rest at the United States Air Force Academy.

Notes

¹Flint O. DuPre, *US Air Force Biographical Dictionary*, (New York: Franklin Watts, Inc., 1965) 84–85.

Appendix B

Photographs

Photo Not Available in this
Electronic Copy

Figure 1. The First Air Staff of the United States Army Air Forces (Fall 1941).¹
Seated from left to right are Brig Gen Ralph P. Cousins, Brig Gen Martin F. Scanlon, Col Earl Naiden, Colonel Vannaman, Colonel Sorenson, and Col Harold L. George. Standing from left to right are Brig Gen Carl A. Spaatz, Colonel Dick, and Lieutenant Colonel Miller

Photo Not Available in this
Electronic Copy

Figure 2. Crash of DH-4B at Gifford, Illinois, by Harold L. George, 4 December 1924.²
George was no stranger to the hazards of early air power. He was involved in at least six aircraft accidents, but was injured only once.

Notes

¹ John Phillips, “Photograph of the First Air Staff of the United States Army Air Force,” Washington, DC, Fall 1941 (168.08-1, AFHRA).

²Aircraft Accident Report, “Crash of DH-4B (24-126) at Gifford, Illinois,” 4 December 1925 (200.3912-1, AFHRA).

Biographical Glossary

- Andrews, Frank M. Lieutenant General. Commander of U.S. forces in the Middle East from November 1942 to February 1943. Commander of U.S. forces in Europe from February 1943 until his death in an aircraft crash in Iceland on 3 May 1943.
- Arnold, Henry H. General of the Air Force. Pioneer airman who was taught to fly by the Wright Brothers and eventually became Commander of Army Air Forces during World War II.
- Brett, George H. Lieutenant General. Chief of the Materiel Division at Wright Field from January 1939 to May 1941. Chief of the Army Air Corps from May 1941 to January 1942. Deputy Supreme Commander of Allied Forces in the Southwest Pacific from January 1942 to November 1942.
- Cannon, John K. General. Commander of 12th Air Support Command for the Western Task Force during the invasion of French Morocco. Commanded the 12th Bomber Command in Algeria from February 1942 to March 1943. Commander of the Twelfth Air Force and responsible for all air operations during the invasion of southern Europe in August 1944. In May 1945 became the commander of U.S. Air Forces in Europe.
- Chennault, Claire L. Major General. Leader of the Flying Tigers in China. Brigadier General in the Chinese Air Force during the Sino-Japanese War. Recalled to active duty by the Army Air Force on 15 April 1942. Became commander of U.S. Air Forces in China in March 1943, and commanded the Fourteenth Air Force in China until the end of the war.
- Clausewitz, Karl M. Prussian general and military theorist. Fought in the French Revolutionary War (1792 to 1799) and the Napoleonic Wars (1800 to 1815). Most significant work, *Vom Kriege* (On War) attempted to distill and systemize his observations on strategy and the conduct of war.

Douhet, Giulio	Italian army officer and military theorist. Fought in the Italo-Turkish War (1911 to 1912) and World War I (1915 to 1918). Commanded the first aerial bombardment unit in Libya during the Italo-Turkish War. In his most famous book, <i>Il Dominio dell'Aria</i> (The Command of the Air), he promoted the aircraft as the ultimate offensive weapon, against which there was no real defense.
Eaker, Ira C.	Lieutenant General. Organized and commanded the VIII Bomber Command from December 1941 to December 1942. Commander of Eighth Air Force in Europe from December 1942 to September 1943. Soon after became commander of all Army Air Forces in the United Kingdom. In January 1944 named Air Commander in Chief of Mediterranean Allied Air Forces, including the Twelfth and Fifteenth Air Forces.
Emmons, Delos C.	Lieutenant General. Chief of Air Combat Command in June 1941 and commanded the Hawaiian Air Forces from ten days after the attack on Pearl Harbor until mid 1943. Commander of Western Defense Command until June 1944.
Fairchild, Muir S.	General. Named Secretary of the newly formed Air Staff in June 1941. Two months later became Assistant Chief of Air Corps. In November 1942 became a member of the Joint Strategic Survey Committee of the Joint Chiefs of Staff. On 27 May 1948 became Vice Chief of Staff of the U.S. Air Force.
Foulois, Benjamin D.	Major General. Chief of Army Air Corps and one of the nation's first military pilots. Taught to fly by the Wright brothers. Chief of the Air Service for the Army Expeditionary Force during World War I. Named Chief of Air Corps 19 December 1931, and retired 4 years later.
George, Harold H.	Brigadier General. Not to be confused with Harold L. George, the subject of this paper. World War I Fighter Ace. In May of 1941 went to the Philippines to command all air units as a member of General MacArthur's staff. Directed the air operations in defense of the Manila Bay. Lost his life in an airplane accident near Darwin Australia on 29 April 1942.
Giles, Barney M.	Lieutenant General. Commander of U.S. Strategic Air Forces in the Pacific in World War II from April 1945 until the end of the war. Commanded final air attack against Japan.

- Kenney, George C. General. Commander of Allied Air Forces in the Southwest Pacific and the Fifth Air Force in July 1942. Joined General MacArthur as his top air officer. Proved value of air power in support of ground and naval forces. Directed the successful air war against Japan for three years.
- Kuter, Laurence S. General. Staff planner for General Arnold during World War II. After AWPD-1 became Assistant Secretary of War Department General Staff. Commander of 1st Bomb Wing in England and directed B-17 attacks on Germany from October 1942 to January 1943. Commander of Allied Tactical Air Forces in North Africa for the first half of 1943. In May 1943 became Assistant Chief of Air Staff for Plans and Combat Operations.
- LeMay, Curtis E. General. Organized and trained the 305th Bomb Group in January 1942, and took it to England for combat. Later commanded the 3rd Bomb Division and in March of 1944 directed the 20th Bomber Command in the China-Burma-India theater. Later became Chief of Staff of the Strategic Air Forces in the Pacific and commanded the bombing of Japan. Commanded Strategic Air Command for nine years from 1949 to 1957. Chief of Staff of the Air Force from 1961 to 1963.
- Marshall, George C. General. Army Chief of Staff throughout World War II. Advisor to Presidents Roosevelt and Truman. Responsible for expansion of 200,000 man pre-war army to over eight million men.
- McNarney, Joseph T. General. Chief of Staff of special Army Observer Group in London from April to December 1941. Deputy chief of staff of the Army from January 1942 until October 1944. Deputy Supreme Allied Commander in the Mediterranean Theater from October 1944 until the end of the war. Succeeded General Eisenhower as Commander of the U.S. Forces in Europe.
- Messerschmidt, W. Famed Nazi Germany aircraft designer.
- Mitchell, William A. Major General. Prophet of American air power. Spent much of his career advocating a separate and independent air service. Went to France in March 1917 as a military observer. Became Chief of Air Service Zone of the Advance. Appointed Chief of Air Service 1st Brigade in June 18, and two months later became Chief of Air Service 1st Army. His outspoken criticism of military superiors after the war eventually led to his court-martial on 28 October 1925. He was found guilty of insubordination and resigned from the Army.

- Quesada, Elwood R. Lieutenant General. Commanded 33rd Pursuit Group from July 1941 to January 1942. Assumed command of the 1st Air Defense Wing in December 1942 and took it to Africa in early 1943. Quesada went to England in October 1943 as commander of the 9th Fighter Command, and directed the air support for the Normandy invasion. As commander of 9th Tactical Air Command he supported the 1st Army in its eventual victory over Germany.
- Patrick, Mason M. Major General. Chief of Army Expeditionary Force's Air Service in World War I. Postwar head of U.S. Air Service and Air Corps.
- Ramey, Roger M. Lieutenant General. Assumed command of 43rd Bomb Group in October 1942 and took it to the Southwest Pacific. Took command of the 5th Bomb Command in June 1943. Later commanded the 5th Air Force in Korea after the Korean War.
- Spaatz, Carl A. General. First Chief of staff of the U.S. Air Force and World War II commander of Strategic Air Forces in Europe.
- Speer, Albert German Reich Minister for Armaments and War Production.
- Stimson, Henry L. Secretary of War during World War II. In late 1941 began to supervise the development of the atomic bomb, and later chaired the Interim Committee which recommended its use.
- Stratemeyer, George General. Chief of the Air Staff under Arnold from June 1942 to mid 1943. In December 1943 became Air Commander of the Eastern Air Command. In May 1945 assumed command of the Army Air Forces in the China theater.
- Tinker, Clarence L. Major General. Commander of the 27th Bomb Group from November 1939 to May 1940. Commander of the 3rd Interceptor Command from May 1940 to January 1942. Commander of Air Forces in Hawaii from January 1942 until his death in a mission against Japanese shipping on 7 June 1942.
- Trenchard, Hugh M. Father of the Royal Air Force. Commander of the Royal Flying Corps during World War I. Promoted a policy of the offense and pushed for an independent air force. While not a theorist, he demonstrated both vision and administrative ability.

- Twining, Nathan F. General. Executive to the Chief of Staff of the Army Air Force from February to June 1942. Went to the South Pacific in June 1942 as Chief of Staff of the Allied Forces. Assumed command of the Thirteenth Air Force in February 1943. Became commander of the Fifteenth Air Force in late 1943 and engineered the heavy bomb raids on the Axis, including those on Ploesti. In August 1944 assumed command of the Ninth Air Force and helped plan the Normandy invasion.
- Walker, Kenneth N. Brigadier General. Assistant Chief of the Plans Division from January 1941 until June 1942. In June 1942 went to the Asiatic Pacific Theater where he served as commander of the 5th Bomber Command. Killed in action on 5 January 1943 over Rabaul, New Britain. Posthumously awarded the Medal of Honor.
- Wedemeyer, Albert C. General. Worked in the Army War Plans Office. Later served as Deputy Chief of Staff under Adm Lord Louis Mountbatten, Supreme Allied Commander in Southeast Asia. In October 1944 named Chief of Staff to Generalissimo Chiang Kai-shek.
- Whitehead, Ennis C. General. In July 1942 went to Southwest Pacific as Deputy Commander of Fifth Air Force. Assumed command of Fifth Air Force in June 1945. He operated directly under General Kenney, and gained a reputation with the Japanese as a ruthless aggressor.
- Yount, Barton K. Lieutenant General. World War II commander of Air Training Command.

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